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CASE REPORT

Rectal Melanoma with Multiple Metastases: A Rare and Aggressive Tumor

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ABSTRACT

Introduction: Rectal melanoma is one type of mucosal melanoma and accounts for fewer than 2% of all mucosal melanomas; it is a rare, aggressive disease with dismal prognosis.

Case Report: We report a case of rectal melanoma with metastasis to the upper gastrointestinal tract (esophagus, stomach, and duodenum), and a computed tomography scan found lesions in liver and brain which were likely to be metastases.

Conclusion: Not all patients are suitable for treatment.

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INTRODUCTION

Rectal melanoma is a rare disease entity with less than 2% of all melanomas occurring in the anorectum, but usually presents with early metastasis, with up to 38% of patients already having distant metastases at the time of diagnosis [1]. It has a very poor prognosis with a mean survival time of 24 months despite surgical resection and adjuvant therapies [2].

In this article, we report a case of a patient with rectal melanoma that appeared on colonoscopy as an elevated ulcerated tumor at the posterior side of the rectum. On gastroscopy, the patient had multiple small black ulcerated lesions at various sites of the upper gastrointestinal tract including esophagus, stomach, and duodenum. Biopsy of these suspicious lesions revealed that they shared the same histopathological characteristics as the rectal tumor. Also, abdominal and pelvic computed tomography (CT) scans showed multiple liver lesions. Interestingly, the patient had a normal colonoscopy 5 months earlier.

CASE REPORT

A 75-year-old female was referred to the gastroenterology department for investigation of iron deficiency anemia (hemoglobin 65 mg/dL). Her only other issues during her current presentation included confusion and chronic constipation. A large rectal mass was found on digital rectal examination. No skin lesions were noted on clinical examination.

The patient underwent gastroscopy which showed multiple black-colored elevated lesions of 2–3 mm diameter in the esophagus, stomach, and duodenum up to the second part, as well as at least four volcano-shaped gastric ulcers with sloughed base (Fig. 1a, b). In addition, a colonoscopy was conducted, but the scope insertion was limited to the rectum only due to poor preparation. In spite of this, it showed an elevated, hard black-colored tumor, 2 × 3 cm in size (Fig. 1c). The patient had a normal colonoscopy only 5 months prior, which was also undertaken for the investigation of mild anemia.

The sections of the gastric mucosa showed solid nests and sheets of malignant cells infiltrating the lower part of the lamina propria. Melanin pigment was present within the cytoplasm of the malignant cells. Immunoperoxidase staining demonstrated that the neoplastic cells had positive staining for human melanoma black (HMB-45) stain (Fig. 2a, b). Mild cytoplasmic staining was noted with S100. Negative staining was seen with AE1/AE3, CK7, and CK20. The sections of small bowel mucosa showed solid nests and sheets of malignant cells infiltrating within the lower part of the lamina propria. Melanin pigment was present within the cytoplasm of the malignant cells. Immunoperoxidase stains showed that the neoplastic cells had positive staining for HMB-45. Mild cytoplasmic staining was noted with S100. Negative staining was seen with AE1/AE3, CK7, and CK20. The sections showed mostly necrotic fragments. One of the fragments showed cords of malignant cells with similar morphology to those found in the gastric and duodenal mucosa. Brown pigments were seen within the cytoplasm. Immunoperoxidase stains showed that there were neoplastic cells having positive staining with HMB-45 (Fig. 2c). Mild cytoplasmic staining was noted with S100. Negative staining was seen with AE1/AE3, CK7 and CK20. Thus, the histological and immunoperoxidase staining features were consistent with malignant melanoma.

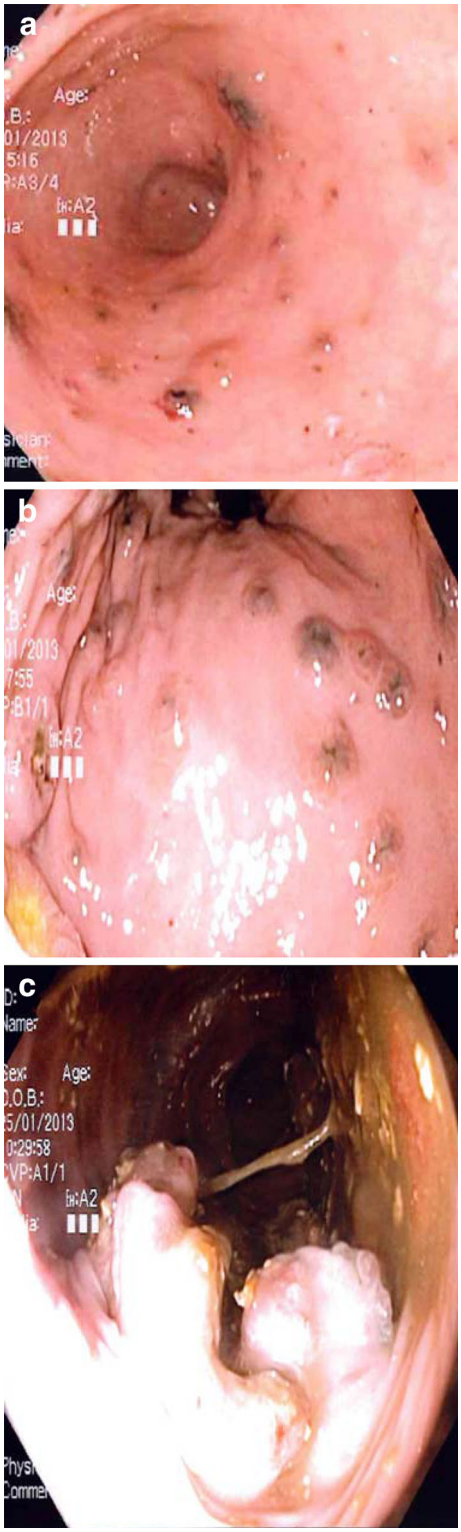
Fig. 1 Upper gastrointestinal endoscopy and colonoscopy findings. **a** Lesions found on gastroscopy throughout the upper gastrointestinal tract; **b** view of lesions found on gastroscopy at the stomach; and **c** rectal tumor on colonoscopy

Her brain, abdominal, and pelvic CT scans showed multiple lesions on the liver, and a mass (15 × 13 mm) in the right parietal lobe of the brain. In this particular case, we assume that rectal tumor is the primary lesion (melanoma) because it is a large size and solitary, and the patient has no skin lesions on examination.

The patient was a resident of a nursing home with multiple co-morbidities, including severe cognitive impairment and limited mobility, resulting in a poor quality of life. After discussion with the family, it was decided not to undertake further investigations or aggressive management, and so she was referred to the palliative care team. Informed consent was obtained from the patient for being included in this case report and for publication of the figures.

DISCUSSION

Melanoma in general is a form of cancer that begins in melanocytes. It may begin in a mole (cutaneous melanoma), but can also begin in



other tissues, as melanocytes are located in various anatomical sites including the base of the epidermis, the eye, epithelia of the nasal cavity, oropharynx, anus, vagina, and urinary tract. Cutaneous melanomas are much more prevalent than noncutaneous melanomas [3]. As rectal histology studies showed that normal individuals have some melanocytes within the squamous mucosa of the anal canal distal to the dentate line, melanomas of the anorectum are thought to arise from these cells [4], but primary melanoma in sun-shielded regions, such as the rectum, merits etiology other than sun exposure. Factors, such as genetics, immunosuppression, and viral infections, may play a role in the etiology of mucosal melanoma [5].

Primary anorectal melanoma is a rare and aggressive disease, accounting for approximately 0.25% of all melanomas [3], and for 0.5% of all rectal tumors [6]. It is more predominant among females, usually in their 5th or 6th decade of life [7] and it seems to be more common among Caucasians [8, 9]. Most anorectal melanomas present at a late stage with symptoms similar to other anorectal disorders, such as bleeding or mass [5, 8]. In a minority of patients, the lesion is discovered incidentally during a screening test [10].

Surgery is suggested as being the best curative treatment for this disease [3]. Wide local excision combined with adjuvant loco-regional radiotherapy is preferred when technically feasible [11]. Abdominoperineal resection is performed in cases of large tumors or where the anal sphincter is involved [11]. Data in the literature on the effect of radiotherapy alone or in combination with surgery are scarce [12–14]. Bujko et al. [14]

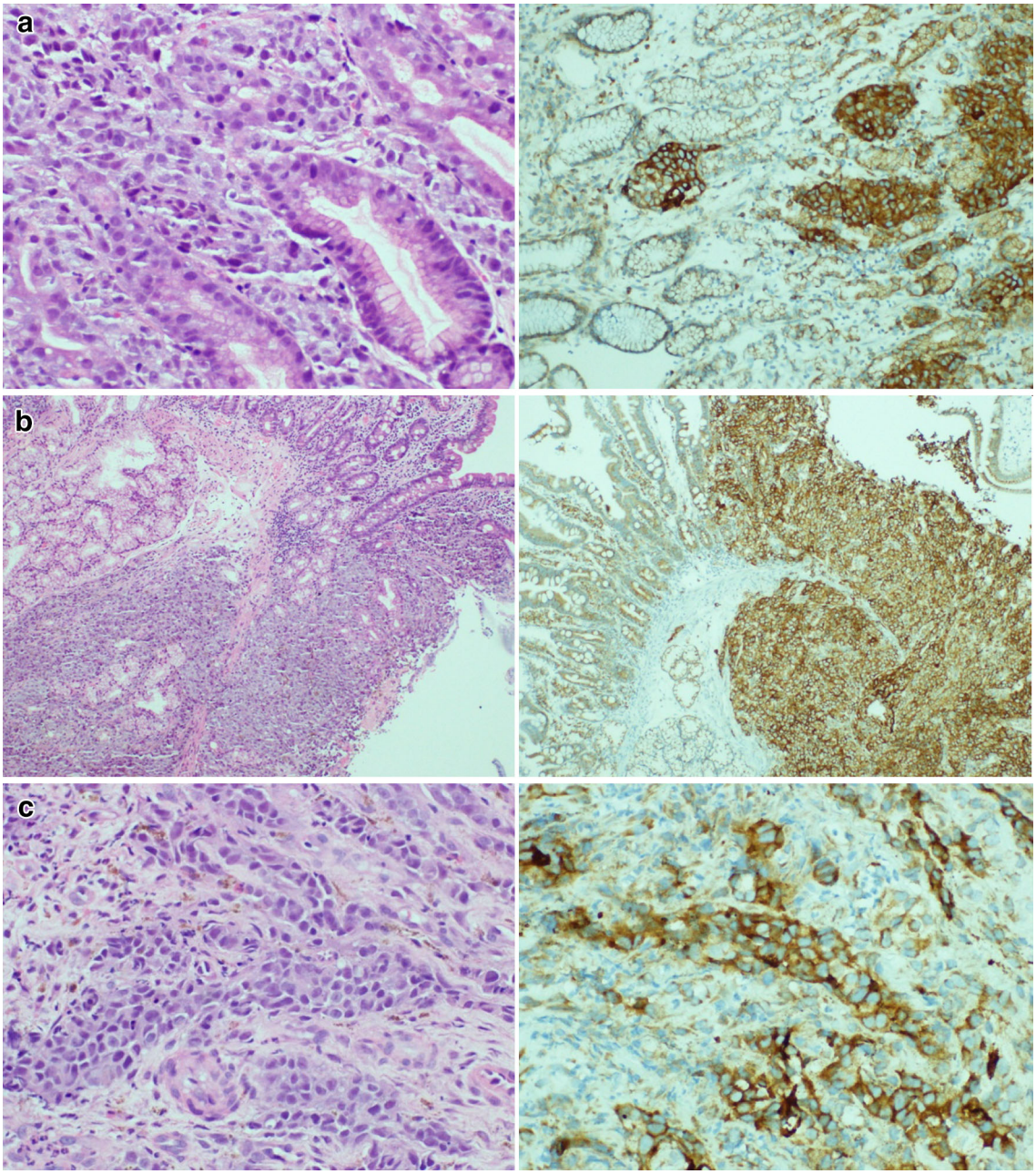


Fig. 2 View of lesions found on gastroscopy at the stomach. **a** gastric biopsy shows neoplastic cells (*left*); gastric biopsy shows melanoma features after human melanoma black (HMB-45) stain was applied (*right*); **b** duodenum biopsy shows neoplastic cells (*left*); duodenum biopsy shows melanoma features after HMB-45 stain was applied (*right*); **c** rectal biopsy shows neoplastic cells (*left*); rectal biopsy shows melanoma features after HMB-45 stain was applied (*right*)

published a report of three cases in which radiotherapy was used resulting in long-lasting control of local symptoms. They observed a high rate of recurrence in the inguinal lymph nodes and recommended that the groin lymph nodes be included in the radiation field [14]. In an additional case report, Gupta et al. [15] suggested that interstitial brachytherapy after

local resection of anorectal melanoma may help to avoid local recurrence.

Nivolumab [16], vemurafenib [17], dabrafenib [18], trametinib [18], lambrolizumab [19], and ipilimumab [16] have shown to be promising in the therapy of advanced melanoma. However, there is no mention of these agents regarding their use in treating anorectal melanoma in the literature. Multiple colonic perforations have been reported as a fatal complication during treatment of metastatic melanoma with ipilimumab [20], and the use of these agents in patients with anorectal melanoma in the future is uncertain.

The overall prognosis of anorectal melanoma remains dismal, despite surgical resection and emergence of various forms of adjuvant therapy [21]. However, some patients when treated by radical resection may experience long-term survival [4]. The prognosis of rectal melanoma is largely related to the stage of disease. The 5-year survival rate is estimated at about 24% for patients with stage I tumors, but patients with stage II and III tumors have appreciably shorter survival times of 12 months on average [22]. The overall 5-year survival rate is less than 20% [21].

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Conflict of interest. Ali M. Ibnian, Vinayak Nagaraja, Guy D. Eslick, and Jamshid S. Kalantar declare that they have no conflicts of interest.

Compliance with ethics guidelines. Informed consent was obtained from the patient for being included in this case report and for publication of the figures.

REFERENCES

1. Podnos YD1, Tsai NC, Smith D, Ellenhorn JD. Factors affecting survival in patients with anal melanoma. Am Surg. 2006;72(10):917–20.
2. Roviello F, Cioppa T, Marrelli D, et al. Primary anorectal melanoma: considerations on a clinical case and review of the literature [in Italian]. Chir Ital. 2003;55(4):575–80.
3. Chang AE, Karnell LH, Menck HR. The National Cancer Data Base report on cutaneous and noncutaneous melanoma: a summary of 84,836 cases from the past decade. The American College of Surgeons Commission on Cancer and the American Cancer Society. Cancer. 1998;83(8): 1664–78.
4. Walls EW. Observations on the microscopic anatomy of the human anal canal. Br J Surg. 1958;45(193):504–12.
5. Fratesi L, Alhusayen R, Walker J. Case report of primary rectal melanoma and review of the etiology of melanoma. J Cutan Med Surg. 2008; 12(3):117–20.
6. Belbaraka R, Elharroudi T, Ismaili N, et al. Management of anorectal melanoma: report of 17 cases and literature review. J Gastrointest Cancer. 2012;43(1):31–5.
7. Ballo MT, Gershenwald JE, Zagars GK, et al. Sphincter-sparing local excision and adjuvant radiation for anal-rectal melanoma. J Clin Oncol. 2002;20(23):4555–8.
8. Cooper PH, Mills SE, Allen MS Jr. Malignant melanoma of the anus: report of 12 patients and analysis of 255 additional cases. Dis Colon Rectum. 1982;25(7):693–703.

9. DeMatos P, Tyler DS, Seigler HF. Malignant melanoma of the mucous membranes: a review of 119 cases. Ann Surg Oncol. 1998;5(8):733–42.

10. Moozar KL, Wong CS, Couture J. Anorectal malignant melanoma: treatment with surgery or radiation therapy, or both. Can J Surg. 2003;46(5):345–9.

11. Sayari S, Moussi A, Bel Haj Salah R, Gherib SB, Haouet K, Zaouche A. Primary anorectal melanoma: a case report. Tunis Med. 2010;88(6):430–2.

12. Thibault C, Sagar P, Nivatvongs S, Ilstrup DM, Wolff BG. Anorectal melanoma: an incurable disease? Dis Colon Rectum. 1997;40(6):661–8.

13. Roumen RM. Anorectal melanoma in The Netherlands: a report of 63 patients. Eur J Surg Oncol. 1996;22(6):598–601.

14. Bujko K, Nowacki MP, Liszka-Dalecki P. Radiation therapy for anorectal melanoma: a report of three cases. Acta Oncol. 1998;37(5):497–9.

15. Gupta R, Sharma SC, Bose SM. Adjuvant interstitial brachytherapy in a case of anorectal melanoma. Trop Gastroenterol. 2000;21(2):86–7.

16. Wolchok JD, Kluger H, Callahan MK, et al. Nivolumab plus ipilimumab in advanced melanoma. N Engl J Med. 2013;369(2):122–33.

17. Ravnan MC, Matalka MS. Vemurafenib in patients with BRAF V600E mutation-positive advanced melanoma. Clin Ther. 2012;34(7):1474–86.

18. Menzies AM, Long GV. Dabrafenib and trametinib, alone and in combination for BRAF-mutant metastatic melanoma. Clin Cancer Res 2014 [Epub ahead of print].

19. Hamid O1, Robert C, Daud A, et al. Safety and tumor responses with lambrolizumab (anti-PD-1) in melanoma. N Engl J Med. 2013;369(2):134–44.

20. Dilling P, Walczak J, Pikiel P, Kruszewski WJ. Multiple colon perforation as a fatal complication during treatment of metastatic melanoma with ipilimumab: case report. Pol Przegl Chir. 2014;86(2):94–6.

21. David AW, Perakath B. Management of anorectal melanomas: a 10-year review. Trop Gastroenterol. 2007;28(2):76–8.

22. Korenkov M, Gönner U, Dünschede F, Junginger T. Rectal melanoma: the value of modern treatment [in German]. Zentralbl Chir. 2008;133(6):564–7.